

**REMARKS**

The Official Action mailed May 25, 2004, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicants respectfully submit that this response is being timely filed.

Claims 1-11 were pending in the present application prior to the above amendment. Claims 8-11 have been canceled and claim 2 has been amended into independent form. The Applicants note with appreciation the allowance of claims 2, 3/2, 5, 6/3/2 and 7/5 (page 4, Paper No. 20040519). For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claim 1 as obvious based on the combination of U.S. Patent No. 5,583,746 to Wang and U.S. Patent No. 6,132,170 to Horng. Paragraph 4 of the Official Action rejects claims 3/1, 4, 6/3/1 and 7/4 as obvious based on the combination of Wang and Horng and U.S. Patent 5,979,541 to Saito. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of

one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claim 1 recites “rotor magnets that are part of the rotor fan and are positioned around a periphery of the rotor fan ... blades of the rotor fan each formed in a same gentle arc ... the outer step that reaches beyond a raised central portion of the heat plate reaching down toward the object being cooled ... [and] the rotor fan with the two-step multi-blade form being shaped like an inverted saucer.” Wang, Horng and Saito, either alone or in combination, do not teach or suggest at least the above-referenced features of the invention.

The Official Action is silent as to rotor magnets that are part of a rotor fan and are positioned around a periphery of the rotor fan. Wang is silent as to magnets. Although Horng discloses that a “ring magnet 623 (FIG. 21) is mounted to an inner periphery of the main body 620” (column 9, lines 16-18), the ring magnet 623 is not positioned around a periphery of the rotor fan. Similarly, although Saito discloses “a cylindrical permanent magnet 74 is set in the inner periphery of the rotor main body 71” (column 5, line 67, to column 6, line 2), the magnet 74 is not positioned around a periphery of the rotor fan. Therefore, Wang, Horng and Saito do not teach or suggest rotor magnets that are part of a rotor fan and are positioned around a periphery of the rotor fan.

Also, the Official Action asserts that Figure 2 of Wang teaches “fan blades with a gentle arc” (page 2, Paper No. 20040519). The Applicants respectfully disagree. As shown, for example, in Figure 4, the blades of the rotor fan of the present invention are each formed in a same gentle arc, i.e. the blades of the fan 10 of the present invention extend from an inner periphery of the fan to an outer periphery of the fan in a same gentle arc. In contrast, each of the blades of the rotor fans disclosed in Wang (Figure

2), Horng (Figures 2, 7, 10, 13, 16 and 19) and Saito (Figures 2 and 3) appear to extend in a straight line from an inner periphery of the fan to an outer periphery of the fan. Therefore, Wang, Horng and Saito do not teach or suggest blades of a rotor fan each formed in a same gentle arc.

Further, the Official Action is silent as to an outer step of a rotor fan blade that reaches beyond a raised central portion of a heat plate reaching down toward an object being cooled. The Official Action relies on baseplate 10 of Wang to teach the heat plate of the present invention. However, baseplate 10 of Wang appears to be flat and does not appear to have a raised central portion. Horng and Saito also do not appear to teach a raised central portion of a heat plate. The Official Action relies on radial extension 325 of Horng to teach the outer step of a rotor fan blade of the present invention. However, radial extension 325 of Horng neither reaches beyond a raised central portion of a heat plate nor reaches down toward an object being cooled. The fan blades of Wang and Saito do not teach or suggest this feature. Therefore, Wang, Horng and Saito do not teach or suggest an outer step of a rotor fan blade that reaches beyond a raised central portion of a heat plate reaching down toward an object being cooled.

Still further, the Official Action asserts that the prior art teaches the "rotor fan and the two step blades forming an inverted saucer over the stator" (page 3, Paper No. 20040519). The Applicants respectfully disagree. As noted above, Wang, Horng and Saito do not teach or suggest an outer step of a rotor fan blade that reaches beyond a raised central portion of a heat plate reaching down toward an object being cooled. As shown best in Figure 2, the fan 10 of the present invention is shaped like an inverted saucer. In contrast, each of the rotor fans disclosed in Wang (Figure 3), Horng (Figures 1, 4, 9, 12, 15, 18 and 21) and Saito (Figures 4, 7 and 8) are clearly flat on the bottom. Therefore, Wang, Horng and Saito do not teach or suggest a rotor fan being shaped like an inverted saucer.

Since Wang, Horng and Saito do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Also, MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the present invention.

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Wang, Horng and Saito or to combine reference teachings to achieve the claimed invention.

The Official Action concedes that "Wang does not teach the fan having a two step inverted saucer shape, a raised central portion of the heat plate, a stator coil substrate, and the rotor blades pushing air in the radial direction" (page 3, Paper No. 20040519). The Official Action relies on Horng to allegedly teach these features (please note the arguments to the contrary above). The Official Action asserts that it "would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the cooling device of Wang with the motor of Saito to improve the cooling effect of the fan" (*Id.*). The Applicants respectfully disagree and traverse the above assertions in the Official Action.

In a rejection based on Wang and Horng, it is unclear why the Official Action makes reference to Saito at page 3, lines 6 and 10. In any event, it appears the Official Action is relying on the "improved cooling effect" of Horng as a reason to replace some of the parts of Wang with some of the parts of Horng. However, it is unclear which parts would be replaced and which parts would be retained. Presumably, the Official Action

would modify the fan 40 of Wang in view of the fan 320 of Figure 10 of Horng. It appears that Horng discloses that "each lower section 324 includes a radial extension 325 to increase the active area for driving air" (column 5, lines 56-58). However, it is unclear why one of ordinary skill in the art at the time of the invention would have been motivated to adapt radial extension 325 of Horng to the fan 40 of Wang. Further, it is unclear how this would be accomplished without destroying the benefits of Wang. For instance, it is unclear whether the fan 320 of Horng would properly function with the square plates 30 of Wang. As shown in Figures 11 and 12, the fan 320 of Horng requires a housing specifically adapted to the shape of the fan 320. It appears one would also be forced to replace the entire structure of Wang with the structure of Figures 10-12 of Horng in order to achieve the desired improved cooling effect. Thus, it is unclear why one of ordinary skill in the art simply would not practice Horng alone and why one would bother trying to combine Wang and Horng. The Applicants respectfully submit that the prior art does not contain sufficient motivation to teach or suggest that the combination proposed by the Examiner is desirable or even possible.

Therefore, in the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

The Official Action notes that claim 2 would be allowable if it were placed into independent form (page 4, Paper No. 20040519). In response, claim 2 has been amended to include the features of independent claim 1. Therefore, claims 2, 3/2, 5, 6/3/2 and 7/5 are believed to be in condition for allowance.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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